

SYSTEM AND METHODS FOR SUBSCRIBERS TO VIEW, SELECT AND OTHERWISE CUSTOMIZE DELIVERY OF PROGRAMMING OVER A COMMUNICATION SYSTEM

Related Applications

This invention claims priority to U.S. provisional application serial no. 60/214,529, filed June 27, 2000, which application is hereby incorporated in its entirety by this reference.

Field of the Invention

This invention relates generally to systems and methods for allowing subscribers to view, select and generally customize program delivery. In one embodiment, the invention relates generally to an electronic programming guide that allows a subscriber to access on-screen listing of programming information and other services to allow the subscriber to view information concerning single or multi-event, Pay-Per-View ("PPV") products.

Background of the Invention

Consumers today have many programming choices, whether the programming is broadcast over the air, delivered via cable, delivered through a wireless communication system, delivered over the Internet or sent via a satellite communication system. Proliferation of these different delivery mediums has resulted in a much broader array of programming choices available to the consumer, including mainstream broadcast programs, movies, specialty shows, news, sporting events, Pay-Per-View, movies on demand, etc. One of the problems with all of these programming choices is that consumers need methods and systems for efficiently navigating throughout the multiple choices.

Back, and Return of the Jedi might be bundled together into a PPV packaged entitled “Star Wars Trilogy,” as shown in Fig. 2C.

Package purchase may be done by the EPG displaying the individual events that make up the package in the usual grid or list format. As usual, the subscriber may highlight an individual event, display information on it, and purchase it. When the subscriber purchases an individual event that is part of a package, the entire package may be purchased and the subscriber may view all of the events within the package. Indeed, U.S. patent no. 6,016,141 describes just such a system. This approach only allows event display and navigation in the usual way. In other words, subscribers will not know whether the event is part of a package unless that is indicated in the event’s title. For instance, using the “Star Wars Trilogy” example discussed earlier, each movie that makes up the package could have the words “Trilogy Package” added to its title. In this case, the movie Return of the Jedi would be displayed as “Return of the Jedi – Trilogy Package”. Unfortunately, this approach creates its own problems. The EPG’s grid or list may not be able to accommodate such a long title. Moreover, subscribers may not understand that the title indicates a package rather than an individual event.

A variation of this approach might be to add information to the event’s description (synopsis) indicating it is part of a package. For instance, the description for Return of the Jedi could include text stating, “Your purchase also includes The Empire Strikes Back and Star Wars.” Again, this extra text may not fit in the space provided for the display of the event’s description. Subscribers also will not see the text unless the subscriber highlighted the individual

event and displayed its description, something a subscriber may not do if they are already familiar with the content of the movie. Also, because the text does not appear in the grid or list, it will have limited influence on the subscriber's impulse buying decision.

Text can be added to the first screen that appears when the subscriber attempts to purchase the event. This screen is often referred to as the "buy screen." The problem with this approach is that the subscriber is unlikely to initiate the buy sequence and see the "buy screen" unless they have already decided to purchase the event. As a result, the text on the buy screen acts primarily as a confirmation message and has little value in influencing the subscriber's initial impulse purchase decision.

A totally different approach might be to merge the individual events that make up the package into one long event, as shown in Fig. 2C. For instance, instead of having individual events entitled Star Wars, The Empire Strikes Back, and Return of the Jedi, the events could be combined together into one large event cell entitled "The Star Wars Trilogy." The description box or "buy screen" for this jumbo event could list the names of the individual events in the package. However, this approach would have the same disadvantages as described above. Furthermore, the EPG's grid or list would not display the start and stop times for individual events within the package or critical information for some subscribers. Also, the subscriber could not highlight an individual event to display information on it, set a reminder for it or schedule it to record.

The approaches discussed all have individual problems; even worse none provide the subscriber the option of purchasing the entire package or individual events within the package. For instance, a service provider cannot offer the Star Wars Trilogy Package for \$6.95 and

individual events such as Return of the Jedi for \$2.95 unless an extra menu screen was added to the buy process.

Accordingly, this invention aims to allow for viewing of PPV products such that the subscriber can scroll through packages, and the individual events within each package. The invention lets programming providers offer multi-event PPV products that span multiple channels over non-contiguous time slots. Further, with this invention, subscribers scroll through the many available channels rapidly without having to scroll on an event by event basis. The system lets the subscriber view packages and enter into the individual events forming each package. This allows subscribers simultaneously to obtain information regarding the PPV package and also information pertaining to each event within the package. Furthermore, it provides the subscriber the ability to purchase a PPV package or a single event within the multi-event package. Additionally, since the user can select either the package or an individual event, the user may use functions such as, for example, autotune or autorecord on either the package or event level.

Summary of the Invention

This invention aims to provide subscribers the flexibility to view, select and customize presentation of programming in a manner not previously available. For programming providers, the present invention allows the providers to market a broader array of products to subscribers, whereby programming revenues can be driven through subscribers' customization of programming selection rather than delivery of programming via standard

specialty channels or a set of Pay-Per-View events. For subscribers, this invention allows rapid access to information necessary to select programming of interest.

The system according to this invention comprises one or more program source(s) linked to event information. The program sources, could be, for instance, a video server coupled with an event information server. The program source couples, such as, via a broadcast programming communication system, to a number of subscribers to the program. The broadcast programming system may comprise a cable system, a wireless system, a satellite system or a broadcast system. Each subscriber has (1) a display device for displaying programming and (2) a control device, like a set top box coupled to the display device or, like a processor built into the display device as one component thereof, by which the subscriber selects programs of interest to be displayed. Using the invention, programming providers can combine one or multiple programmed events into multi-event packages. Subscribers can select, view information about particular packages or events therein and purchase desired packages or events therein.

In one embodiment, the invention takes the form of an EPG that allows subscribers to view programming packages and associated information. The EPG allows a subscriber to view individual events on regular cable channels and also multi-event PPV products as a single package. The subscriber can scroll through the multi-event PPV product wrappers until a product of interest is found. If the subscriber wants additional information about the individual events contained within each product wrapper, the subscriber toggles a viewing mode that allows the subscriber to scroll through individual event wrappers located within

- Display information on an individual event, a package or event that is part of a package;
- Set a reminder for the subscriber to view an event or package;
- Schedule an event or package to be automatically tuned or recorded;
- Buy an event package - or an individual event that is part of a package; and
- Tune to the channel showing the event or package

This invention aims to achieve one, all, or combinations of the following objectives:

- to provide systems and methods for programming providers to offer broader selections and combinations of programming events to subscribers;
- to provide systems and methods for subscribers to obtain more information on programming events;
- to provide systems and methods for subscribers to obtain information about series of associated events;
- to enhance programming revenues by providing subscribers more programming options at more flexible costs; and
- to provide improved programming guides, navigation capacities and information for presentation to subscribers of communication systems providing various programming events.

Brief Description of the Drawings

Figure 1 is a non-interactive program guide modulated onto a cable TV channel.

Figure 14 is a view of the hyperscroll mode of Figure 11 time shifted forward to the Monday of the following week.

Figure 16 is an expanded view of a PPV package in the EPG grid of Figure 15.

Figure 18 is a process flow diagram of the preferred embodiment of the present invention.

General Terms:

Channel: A frequency band for transmitting television programming, in which is received by a tuner and displayed on a television set, for example, channel 2.

Electronic Program Guide: An electronic program guide is a grid, table or other presentation of programming information organized by various parameters, such as, channel and time.

Event Cell: An event cell is the “container” that accommodates the information relating to the event and becomes highlighted when selected by the user.

Event: An event is a single entertainment program ranging from cable, to sports, to broadcast television, to movies, to interactive events, such as web casts.

Hyperscroll: Hyperscroll is a viewing mode that allows a user to move from one event to another within a Pay-Per-View Package.

Navigate: Navigating is the ability to control the movement of the cursor from one program listing to another in the electronic program guide.

Package: A package is a preassembled grouping of individual events to be sold as a single package.

Product Wrapper: A product wrapper is the “container” that accommodates the information relating to a group of individual events and becomes highlighted when selected by the user.

Programming Data: Programming data includes information describing the event’s appearance on the broadcast medium. Such information may include: channel, start time, end time, content descriptor, title and pricing information

Programming System: The programming system comprises the equipment necessary to deliver the programming guide to the user, for example, a cable system, a wireless system, a satellite system or a broadcast system.

Screen: A screen is the data that is displayed or projected for the user to view.

Scroll: To cause text or graphics to move, e.g., vertically or horizontally, across a screen so that a new line of data appears for every line of data that moves off the screen.

Set Top Box: A set-top box is a device that enables a television set to become a user interface to the Internet, cable, satellite or which enables a television set to receive and decode digital television broadcasts. The set top box may be a stand alone component or it may include software and hardware integrated into the television or other components associated therewith.

Subscriber: A subscriber is someone who pays for programming service and uses the EPG information to determine what programming is available on each channel.

Overview:

Figure 3 shows an overview of a system according to the present invention. Figure 3 shows a transmission facility 315, which can be in a cable system, a cable head-end or the like. In a satellite delivery system, the transmission facility 315 may be a centralized facility or regional facility serving all or portions of the satellite distribution network. Likewise, for a regular broadcast communication system, the transmission facility 315 can be a local or national affiliate. In any event, transmission facility 315 has the components necessary to broadcast various programming events, store those events and store data associated with

those events. In a particular implementation shown in Figure 3, transmission facility 315 has a broadcast server 320, a video server 340, and an EPG data server 360. As a skilled person will understand, each of these servers, 320, 340 and 360 may be supplied by third parties. For instance, Figure 3 shows that an EPG data provider 362 provides the data that is stored by the EPG data server 360. Broadcast server 320, according to a schedule set by the particular programming service provider, broadcasts video and EPG data via the distribution network 372 to multiple customer premises. Each customer premise 380 has equipment for displaying programming events as well as the data associated therewith. For instance, customer premises 380 may have a TV 382 with an associated set top box 384. Most consumers will also have a VCR 385 and/or DVR 386. Likewise, especially as penetration of PCs into the home increases, consumer may have a PC 387 associated with the distribution network 370 as well as other consumer electronic devices located at customer premises 380. Skilled persons will recognize that TV 382 could incorporate the functionality of set top box 384. Similarly, as convergence of telecommunications, computing and broadcast equipment continues, PC 387 may also be the display device for displaying the various programming events selected by the subscribers as well as the data associated therewith provided by the transmission facility 315 over the distribution network 370.

Event Packaging:

One aspect of the method of this invention comprises a method for packaging programming events in which programming events are associated with one another in terms of content, channel, time, source of programming distribution or other parameters described

channel or multiple events based on reoccurrence over a set period, such as, over a weekend, weekly or bi-weekly. The process of association results in a richer variety of programming packages that are offer to subscribers via the present invention.

Navigation of Guide Data:

Figure 4, shows a screen face of the present invention that may be seen by a subscriber. The Electronic Program Guide (“EPG”) allows the subscriber to scroll through multi-event PPV packages instead of scrolling through each individual event. Within this first mode, regular and premium channels would be listed with event cells and only the channels containing multi-event PPV products would be displayed to the subscriber in a product wrapper. This capability relies on the EPG navigator’s support of graphical display of multi-event package information, for example, a color coded or shaded product wrapper 20 surrounding associated events, as shown in Figures 4 through 14.

In a first embodiment, with reference to Figures 6 - 10, for an All-day by Title product, a product 100 is usually made up of multiple events 101-106. Events 101-106 are usually scheduled to play on contiguous channels, in a staggercast pattern. Staggercast means that the start times of the individual events are staggered so that a subscriber does not have to wait very long for the next event to begin. When the EPG is in the product navigation mode, the subscriber may scroll through an All-day title in one pass, using the remote’s up and down navigation arrows, regardless of the number of events contained in that product. For example, with reference to Figures 6-8, if the subscriber pushed the down arrow once, he would move from package 100 to package 200. This is shown in Figure 6 by the highlighted package wrapper of product 100. In Figure 7, the wrapper for product 200 is highlighted because the subscriber

navigated down to the next product. Once again, in Figure 8, the wrapper for product 300 is highlighted. Thus, the product wrapper feature allows rapid scrolling through PPV products. The greater the number of All-day by Title events in a single product, the more rapidly a customer can find and select the product that they are interested in.

To highlight an individual event, the subscriber can, for example, double click the enter button to enter a hyperscroll mode. The hyperscroll mode is a second viewing mode that allows the subscriber to move from event to event within the product wrapper. For example, in Figure 6, if the subscriber highlighted package 100 and then double clicked the enter button on the remote, the navigator would enter the hyperscroll mode and the wrapper for event 101 would become highlighted. This would allow the subscriber to pull up information specific to that event, including, for example: content data describing the event, scheduling data describing when that event will be played and the channel and pricing data explaining purchase price, individual event pricing or both. It would also allow the subscriber to select a single event for purchase within a PPV product.

All-day by Title products will typically shift downward in the channel lineup from day to day, to allow for newer titles to premier at the top of the PPV product listing. Therefore, scrolling to the right or left must account for the channel offset. Thus, if the same All-day by Title product for the next day were playing on a different group of channels, then scrolling to the right, would bring the subscriber to the next days product on a different group of channels, as is seen by comparing Figures 6 and 9. In the example illustrated therein, All-day by Title product of Titanic 100 is playing on channels 705-709 on Friday, and when the subscriber scrolls to the right to get to Saturday's All-day products, the next All-day by Title Product of Titanic is being

shown on channels 708-712. Also, note that Products 200 and 300 also shifted in channel range from Friday's all-day product to Saturday's all-day product. However, if an All-day by Title product were aligned with the same channel range on a subsequent day, scrolling to the right would take the subscriber to the beginning time of the same product, which may typically start at 6 or 7:00 a.m., and play on the same channels on the subsequent day. Thus, no channel change would occur. Therefore, the navigation algorithm determines to which product to navigate. The options are: (1) Navigate to the same product, if it is available either on the same or on different channels; or (2) Navigate to the product occupying the first channel of the channel range of the previous product, if the previous product is not being offered on the subsequent day.

When the subscriber navigates to the beginning of a new product day, within the product mode, some events may not be visible, as seen in Figure 9. At 6:00 a.m., the events on channels 710-712 are not shown because they are either in the previous day's product, or have not started within the present day's product due to the staggercast of the individual events within a product. Typically, there will be some straggling events from the previous day's product, and they should not appear in the current day's product. To see these events, the subscriber would need to switch to the hyperscroll event mode allowing the subscriber to scroll through each individual event wrapper. For this reason, the preferred scrolling option would be to move to the same channel lineup in the subsequent day.

All-day by Channel and Multi-hour Series products operate in a straightforward manner, since they occupy only one channel. All-day by Channel products can either be (1) the same event playing all day or (2) multiple events playing on a single channel. Thus, navigation is quite simple: scrolling to the right in the EPG grid takes the subscriber to the start time of the next

product on that channel, usually 6:00 a.m. of the next day. Multi-hour Series packages, as shown in Figure 4, would operate the same as All-day by Channel since it is played on a single channel. Thus, if the subscriber navigates to the right, in the EPG grid, it would take him to the next product start time, which could occur either in the same day or during a subsequent day, depending upon the length of the product. As with the prior products, if the subscriber wants to navigate through the individual events that make up one of these two products, they must double click the enter button to engage the hyperscrolling mode. This mode is extremely useful with multi-hour and all-day by channel products because it allows the subscriber to select specific events within the product and also gives the subscriber the ability to bring up information pertaining to the individual events contained in the multi-event product.

Other exemplary multi-event PPV products made possible by this invention are the Season Ticket product, Weekend Ticket product and Weekly Ticket product. With reference to Figures 11-14, a Weekly Ticket product event 401 is shown on channel 780. A second product event 402 is shown on channel 782 starting at the end of event 401. As seen from the example in Figure 11, Multi-event PPV products present other challenges because the events can be offered on different channels, on different days, and at different times. Consequently, the events within the multi-event product would show up on different EPG pages. To account for these problems, a second new viewing mode, the collapsed hyperscroll mode, brings together those channels that are associated with a given product.

For example in Figure 12, when a subscriber scrolls in the product mode, to event 401 of a Weekly Ticket product, the EPG recognizes that the product contains non-contiguous events in the channel domain and/or non-contiguous event start times in the time domain. The subscriber

[illegible]

In a second embodiment, a zoom mode is used to view the PPV events within a product. In this embodiment of the invention, moving the cursor will only highlight a package (outer wrapper) and will not highlight individual events within the package unless the subscriber presses a Zoom In/Out key that switches the cursor from the package mode to an expanded event mode. As seen in Figure 15, in this embodiment channel numbers are not displayed when viewing the PPV products. When a product is selected, for example, Entrapment 501, the user may enter a zoom mode that expands the selected product to display the individual events, as shown in Figure 16. The grid times remain the same as in the previous collapsed mode. The days shown on the top of the grid will indicate only the applicable days of the current product. The zoom mode easily accommodates non-contiguous channel scheduling. As shown in Figure

17, as the user scrolls to the right, additional programming that is part of the product is displayed. Within this expanded mode, pressing the arrow buttons move the subscriber from event to event in the expanded screen view. This allows the subscriber to purchase or pull up information regarding each individual event. To exit the expanded mode, the subscriber presses the zoom button once more and is returned to the product mode.

In yet another embodiment of the invention, the user can scroll through the EPG grid using the up - down and left - right buttons on the remote control. Once the user reaches the multi-event PPV products the first movement on to a package highlights the package wrapper. For example, in Figure 6, once the user moves down and highlights package 100 the next down arrow keystroke will move the user onto individual event 101. A second down keystroke will highlight individual event 102 and a third keystroke to 104, etc. Once event 106 has been reached, an additional down arrow keystroke will highlight package 200. Thus, it can be seen from this example that the arrow keys are all that is necessary for selecting packages or individual events within a package. The left and right arrow keys perform similar functions. For example, in Figure 6, if event 102 is highlighted, a right arrow keystroke will cause event 103 to be highlighted. Each successive right arrow keystroke will cause the next event within the package to become selected until the last event in the package is reached. Once the last event in a package is reached, the next arrow keystroke will cause the adjacent package wrapper to become selected.

Implementation of EPG and navigator functionality according to this invention:

The EPG and navigator functionality described above may be implemented in various hardware. For instance, the EPG according to this invention may be implemented as a

software module within a set top box, such as STB 384 associated with TV 382, as shown in Figure 3. Alternatively, the EPG according to this invention may be integrated with the functionality of TV 382 provided with an appropriate processor and memory for storing EPG guide data. Likewise, as convergence continues, the EPG and navigator functionality according to this invention may be implemented within PC 387.

Regardless of where implemented, the EPG and navigator functionality of this invention may comprise a software module carrying out the process of steps shown in Figure 18. At step 700, the process begins by the user pressing a keystroke on the control device. The keystroke is detected at step 705. At step 710, the system must determine if the detected keystroke is a cursor key, for example, a up, down, left, or right arrow key.

At 725, if the keystroke is a cursor key the program next determines whether the system is in the event cell or package mode. At step 755, if the system is in the event cell mode (hyperscroll mode) the system next determines if the next event to be selected is part of the same package or part of a different package. If the adjoining cell is part of the same package, at step 770, the system will highlight the next displayed event cell within the package in the direction represented by the cursor key. However, at step 755, if the adjoining event cell is not part of the same package, then at step 760 the system will highlight the adjoining package wrapper or non-packaged wrapper in the direction of the depressed cursor key, for example, left, right, up or down. In addition to highlighting the adjoining package wrapper, the system, at step 765, exits the event cell mode (hyperscroll mode) placing the EPG system back into the package mode. The process ends at step 755 and the system awaits

another keystroke. Alternatively in a second embodiment, the system can remain in the event cell mode and additional cursor keystrokes navigates through the EPG at the event cell level.

Looking back to step 725, if the system was in the package mode instead of the event cell mode when the cursor key was pressed, at step 750, the adjoining package wrapper or non packaged wrapper becomes highlighted. This, allows the user to navigate from package to package in the EPG reducing the amount of time necessary to scan through the EPG. Thereafter, the process ends and the system awaits for the next keystroke.

Referring back to step 710, if a cursor key is not depressed, at step 715, the system next determines if the keystroke was the zoom key. At step 720, if the key depressed was not the zoom key, the system processes the keystroke and carries out the function associated with the keystroke. For example, if the enter key for buying the selected programming is depressed the currently highlighted event is purchased and displayed to the viewer.

Alternatively, at step 715, if the zoom key is depressed, at step 730, the system determines whether the system is currently highlighting a package wrapper. In effect, the system is checking whether it is currently in the package mode or the event cell mode (hyperscroll/zoom mode). At step 735, if the system is in the event cell mode (hyperscroll/zoom mode) and not highlighting an event cell within a package wrapper, the process ends at step 775. However, if a event cell is being highlighted at step 735, the system, at step 745, will exit the event cell (hyperscroll/zoom) mode and highlight the package wrapper associated with the event cell that was selected, thus ending the process.

On the other hand, at step 730, if the system is currently highlighting a package

wrapper because it is in the package mode, at step 740, the system will highlight the first displayed event cell within the current selected package. Thus, the system enters the event cell (hyperscroll/zoom) mode. The process then ends at step 775 and awaits another keystroke.

The foregoing is provided for purposes of illustrating, explaining, and describing embodiments of the present invention, an improved EPG system for providing multi-event PPV products. Modifications and adaptations to these embodiments will be apparent to those skilled in the art and may be made without departing from the spirit of the invention or the scope of the following claims.